=> D HIS FUL

```
(FILE 'REGISTRY' ENTERED AT 17:31:27 ON 22 JUN 2007)
L1
                STR
                STR
L3 .
L4
                STR
L14
            117 SEA SSS FUL L1 AND (L3 OR L4)
L23
                STR
L25
                STR
L27
                STR
L31
                STR
L33
                STR
                STR
L35
           1216 SEA SSS FUL L23 OR L25 OR L27
L38
L40
              O SEA SSS FUL L31 OR L33 OR L35
L41
                STR
L42
              3 SEA SUB=L14 SSS FUL L41
L43
                STR
L45
              5 SEA SUB=L14 SSS FUL L43
L51
                STR
            943 SEA SUB=L38 SSS FUL L51
L53
                STR
L55
L56
            250 SEA SUB=L53 SSS FUL L55
L69
                STR
            198 SEA SUB=L56 SSS FUL L69
L70
             52 SEA ABB=ON PLU=ON L56 NOT L70
L71
                STR
L85
                STR
L86
                STR
L87
             11 SEA SUB=L38 SSS FUL L85 OR L86 OR L87
L89
             68 SEA ABB=ON PLU=ON L40 OR L42 OR L45 OR L71 OR L89
L90
     FILE 'HCAPLUS' ENTERED AT 19:23:13 ON 22 JUN 2007
             19 SEA ABB=ON PLU=ON L90
L91
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FILE HCAPLUS

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This file contains CAS Registry Numbers for easy and accurate substance identification.

US 10/525012-B

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 21 JUN 2007 HIGHEST RN 938223-21-3 DICTIONARY FILE UPDATES: 21 JUN 2007 HIGHEST RN 938223-21-3

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TSCA INFORMATION NOW CURRENT THROUGH December 2, 2006

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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

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=> d stat que 191 L1 STR

= >

VAR G1=OH/13 REP G2 = (0-9) C NODE ATTRIBUTES: IS RC NSPEC AΤ NSPEC IS RC AΤ NSPEC IS RC AT IS RC NSPEC AT10

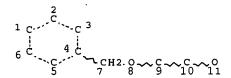
DEFAULT MLEVEL IS ATOM GGCAT IS MCY AT 6

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE L3 STR



NODE ATTRIBUTES:

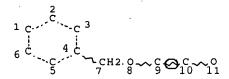
NSPEC IS C AT 9
NSPEC IS C AT 10
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC 1

NUMBER OF NODES IS 11.

STEREO ATTRIBUTES: NONE L4 STR



NODE ATTRIBUTES:

NSPEC IS C AT 9
NSPEC IS C AT 10
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

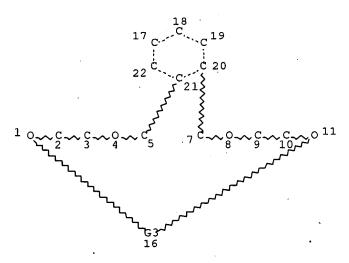
GRAPH ATTRIBUTES:

RSPEC 1

NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE

L14 117 SEA FILE=REGISTRY SSS FUL L1 AND (L3 OR L4)
L23 STR



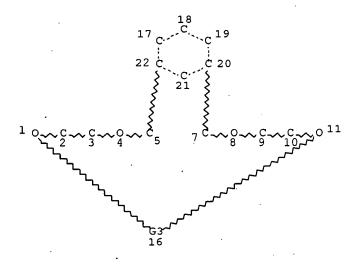
REP G3 = (2-20) A NODE ATTRIBUTES: NSPEC IS R ATIS R NSPEC ATNSPEC IS R ATNSPEC IS R ATNSPEC IS R ATNSPEC IS R ΑT ΑT NSPEC IS R 8 IS R AT9 NSPEC NSPEC IS R AT 10 IS R ΑT 11 NSPEC DEFAULT MLEVEL IS ATOM DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 17

STEREO ATTRIBUTES: NONE L25 STR .



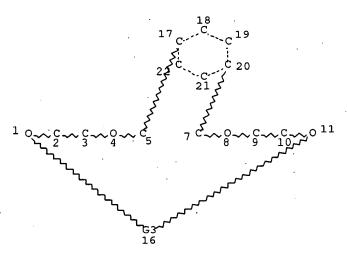
REP G3 = (2-20) A NODE ATTRIBUTES: NSPEC IS R AΤ ATNSPEC IS R IS R NSPEC ATNSPEC IS R ΑT ΑT NSPEC IS R NSPEC IS R ΑT NSPEC IS R AT NSPEC IS R ΑT 9 ΑT 10 **NSPEC** IS R NSPEC IS R AT11 DEFAULT MLEVEL IS ATOM DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 17

STEREO ATTRIBUTES: NONE L27 STR



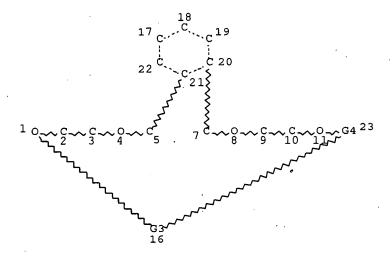
REP $G3 = (2-20)$ A					
NODE ATTRIBUTES:					
NSPEC	IS	R		ΑT	1
NSPEC	IS	R		ΑT	2
NSPEC	IS	R		AT	3
NSPEC	IS	R		ΑT	4
NSPEC	IS	R		ΑT	5
NSPEC	IS	R		ΑT	7
NSPEC	IS	R		ΑT	. 8
NSPEC	IS	R		ΑT	9
NSPEC	IS	R		ΑT	10
NSPEC	IS	R		ΑT	11
DEFAULT	MLI	EVEL	IS	ATO	M
DEFAULT	ECI	LEVE	LIS	5 LI	MITED

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 17

STEREO ATTRIBUTES: NONE L31 STR

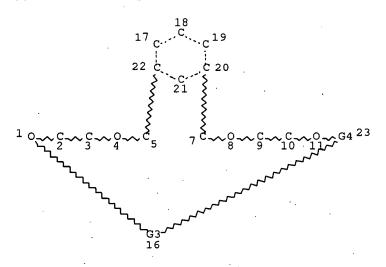


REP G3 = (20 - 20) A REP G4 = (1-11) A NODE ATTRIBUTES: **NSPEC** IS R AΤ IS R NSPEC AT 2 IS R NSPEC ATNSPEC IS R AT NSPEC AT 5 IS R 7 IS R AΤ NSPEC NSPEC IS R AT NSPEC IS R ΑT 9 NSPEC IS R ΑT 10 NSPEC IS R ΑT DEFAULT MLEVEL IS ATOM DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE L33 STR

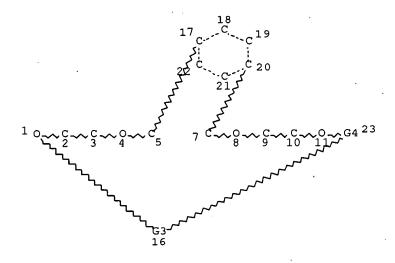


REP G3 = (20 - 20) A REP G4=(1-11) A NODE ATTRIBUTES: NSPEC IS R AT NSPEC IS R AT 2 NSPEC IS R . AT 3 NSPEC IS R AT NSPEC IS R AT 7 NSPEC IS R AT NSPEC IS R ATNSPEC IS R AT 9 NSPEC AT 10 IS R NSPEC IS R ΑT DEFAULT MLEVEL IS ATOM DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES: RSPEC I

NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE L35 STR



REP G3 = (20-20) A REP G4 = (1-11) A NODE ATTRIBUTES: NSPEC IS R ΑT 1 2 NSPEC IS R ΑT NSPEC IS R AT NSPEC IS R ATNSPEC IS R AT 5 **NSPEC** IS R AT 7 NSPEC IS R AT 8 AT 9 NSPEC IS R NSPEC IS R AΤ 10 NSPEC IS R ΑT 11. DEFAULT MLEVEL IS ATOM DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE

L38

GGCAT

1216 SEA FILE=REGISTRY SSS FUL L23 OR L25 OR L27

L40

O SEA FILE=REGISTRY SSS FUL L31 OR L33 OR L35

L41

STR

AΤ

VAR G1=CY/13/15

NODE ATTRIBUTES:

NSPEC IS RC AΤ 2 3 NSPEC IS RC AΤ IS RC AΤ NSPEC ΑT 10 **NSPEC** IS RC DEFAULT MLEVEL IS ATOM

IS MCY

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE

L42

3 SEA FILE=REGISTRY SUB=L14 SSS FUL L41

L43 ST

VAR G1=CY/13/14

NODE ATTRIBUTES:

IS RC NSPEC AΤ NSPEC IS RC AΤ IS RC NSPEC ΑT IS RC NSPEC ΑT 10 DEFAULT MLEVEL IS ATOM GGCAT IS MCY AT 6 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

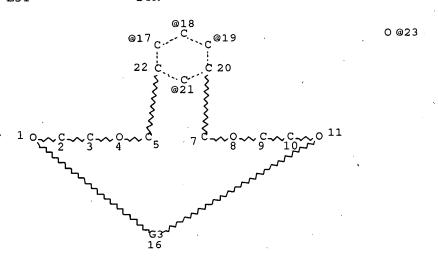
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

L45 5 SEA FILE=REGISTRY SUB=L14 SSS FUL L43

L51 STR



REP G3 = (2-20) A

VPA 23-17/18/19/21 U

NODE ATTRIBUTES:

NSPEC IS R AT 1 NSPEC IS R AT 2 NSPEC IS R AT 3

```
NSPEC
        IS R
                   AΤ
NSPEC
        IS R
                   AΤ
                        7
        IS R
                   AT
NSPEC
        IS R
                   ΑT
                        8
NSPEC
NSPEC
       .IS R
                   ΑT
        IS R
NSPEC
                   ΑT
                       10
        IS R
NSPEC
                   AT
                       11
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED
```

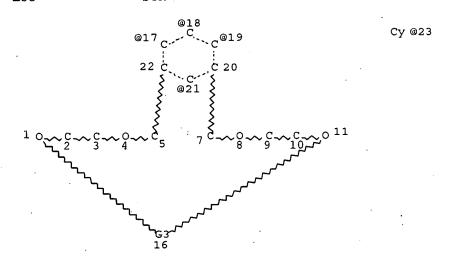
GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE

L53 943 SEA FILE=REGISTRY SUB=L38 SSS FUL L51 L55 STR



REP G3 = (2-20) A VPA 23-17/18/19/21 U NODE ATTRIBUTES: ΑT NSPEC IS R 1 AΤ 2 NSPEC IS R. . IS R AT 3 NSPEC NSPEC IS R ΑT NSPEC IS R AT IS R AT 7 NSPEC NSPEC IS R AT 8 NSPEC IS R AΤ 9 ΑT 10 NSPEC IS R 11 NSPEC IS R AΤ DEFAULT MLEVEL IS ATOM -DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

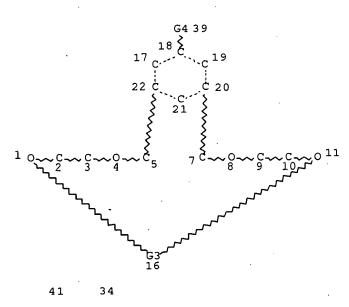
RSPEC I

NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE

L56 250 SEA FILE=REGISTRY SUB=L53 SSS FUL L55

L69 STR



Page 1-A

Page 2-A REP G3=(2-20) A

VAR G4 = 32/35

NODE ATTRIBUTES:

NSPEC	IS	R	ΤA	1
NSPEC	IS	R	AT	2
NSPEC	IS	R	AT	3
NSPEC	IS	R	AΤ	4
NSPEC	IS	R	AT	5
NSPEC	IS	R	AT	7
NSPEC	IS	R	AΤ	8
NSPEC	IS	R	ΤA	9
NSPEC	IS	R	AT	10
NSPEC	IS	R	AT	11

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

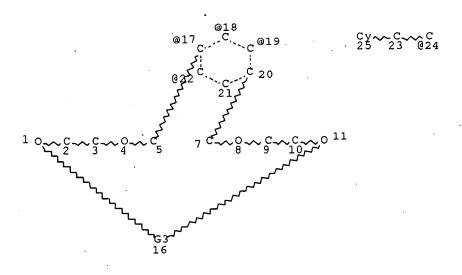
NUMBER OF NODES IS 36

STEREO ATTRIBUTES: NONE

L70 198 SEA FILE=REGISTRY SUB=L56 SSS FUL L69

L71 52 SEA FILE=REGISTRY ABB=ON PLU=ON L56 NOT L70

L85 STR



REP G3=(2-20) A VPA 24-17/18/19/22 U NODE ATTRIBUTES: NSPEC IS R AT

NSPEC	IS.	R		AT	1
NSPEC	ĮS	R		AΤ	2
NSPEC	IS	R		ΑT	3
NSPEC	IS	R		PΑ	4
NSPEC	IS	R		AT	5
NSPEC	IS	R		AΤ	7
NSPEC	IS	R		ΑT	8
NSPEC	IS	R		AΤ	9
NSPEC	IS	R		ΑT	10
NSPEC	IS	R		ΑT	11
DEFAULT	MLI	EVEL	IS	ATO	M

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE L86 STR

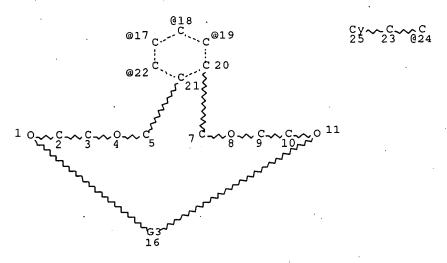
REP G3=	2-2	20) A				
VPA 24-1	7/1	18/19/2	21 U			
NODE ATTRIBUTES:						
NSPEC	IS	R	ΑT	1 .		
NSPEC	IS	R	AΤ	2		
NSPEC	IS	R	AT	3		
NSPEC	IS	R	AΤ	4		
NSPEC	IS	R	AT	5		
NSPEC	IS	R	AΤ	7		
NSPEC	IS	R	AΤ	8		
NSPEC	IS	R	AΤ	9		
NSPEC	IS	R	TΑ	10		
NSPEC	IS	R	ΑT	11		
DEFAULT	MLI	EVEL I	S ATO	M		
DEFAULT	ECI	LEVEL :	IS LIN	MITED		

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE L87 STR



REP G3 = (2-20) A VPA 24-17/18/19/22 U NODE ATTRIBUTES: NSPEC IS R AΤ NSPEC IS R ΑT AT NSPEC IS R ATNSPEC IS R NSPEC IS R AT NSPEC IS R IS R AT NSPEC. 9 IS R ΑT NSPEC NSPEC IS R ΑT 10 IS R ΑT NSPEC DEFAULT MLEVEL IS ATOM DEFAULT ECLEVEL IS LIMITED